

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A cobalt-nickel-iron alloy thin film containing 60 to 75 weight % cobalt, 10 to 20 weight % nickel, and ~~at least 10 to 20~~ weight % iron ~~but less than 20 weight % iron~~ and having a crystal structure that is a mixture of a body-centered cubic structure phase and a face-centered cubic structure phase, wherein I_b/I_f is in the range of 0.30.375 to 0.7 inclusive where I_b represents the intensity of an X-ray diffracted from a (110)-plane of the body-centered cubic structure and I_f represents the intensity of an X-ray diffracted from a (111)-plane of the face-centered cubic structure.

2. (Withdrawn) A method of forming a cobalt-nickel-iron alloy thin film containing 60 to 75 weight % cobalt, 10 to 20 weight % nickel, and 10 to 20 weight % iron, and having a crystal structure that is a mixture of a body-centered cubic structure phase and a face-centered cubic structure phase through electroplating,

wherein the cobalt-nickel-iron alloy thin film is formed such that I_b/I_f falls within the range of 0.3 to 0.7 inclusive where I_b represents the intensity of an X-ray diffracted from a (110)-plane of the body-centered cubic structure and I_f represents the intensity of an X-ray diffracted from a (111)-plane of the face-centered cubic structure.

3. (Withdrawn) A method of forming a cobalt-nickel-iron alloy thin film according to claim 2, wherein the pH of a plating bath for forming the cobalt-nickel-iron alloy thin film through electroplating is adjusted to 3.0 to 4.0 inclusive.

4. (Withdrawn) A method of forming a cobalt-nickel-iron alloy thin film according to claim 3, wherein the value of I_b/I_f is controlled by controlling the pH of the plating bath.

5. (Currently Amended) A thin-film magnetic head comprising:

a medium facing surface that faces toward a recording medium;

a first magnetic layer and a second magnetic layer magnetically coupled to each other and including magnetic pole portions that are opposed to each other and placed in regions of the magnetic layers on a side of the medium facing surface, each of the magnetic layers including at least one layer;

a gap layer provided between the magnetic pole portions of the first and second magnetic layers; and

a thin-film coil at least a part of which is placed between the first and second magnetic layers, the at least part of the coil being insulated from the first and second magnetic layers, wherein:

at least either of the first and second magnetic layers includes a part made of a cobalt-nickel-iron alloy thin film; and

the cobalt-nickel-iron alloy thin film contains 60 to 75 weight % cobalt, 10 to 20 weight % nickel, and ~~at least 10 to 20~~ weight % iron but less than 20 weight % iron, and has a crystal structure that is a mixture of a body-centered cubic structure phase and a face-centered cubic structure phase, in which I_b/I_f is in the range of ~~0.30.375~~ to 0.7 inclusive where I_b represents the intensity of an X-ray diffracted from a (110)-plane of the body-centered cubic structure and I_f represents the intensity of an X-ray diffracted from a (111)-plane of the face-centered cubic structure.

6. (Withdrawn) A method of manufacturing a thin-film magnetic head comprising: a medium facing surface that faces toward a recording medium; a first magnetic layer and a second magnetic layer magnetically coupled to each other and including magnetic pole portions that are opposed to each other and placed in regions of the magnetic layers on a side of the medium facing surface, each of the magnetic layers including at least one layer; a gap layer provided between the magnetic pole portions of the first and second magnetic layers; and a thin-film coil at least a part of which is placed between the first and second magnetic

layers, the at least part of the coil being insulating from the first and second magnetic layers, wherein at least either of the first and second magnetic layers includes a part made of a cobalt-nickel-iron alloy thin film, the method including the steps of:

forming the first magnetic layer;
forming the gap layer on the first magnetic layer;
forming the second magnetic layer on the gap layer; and forming the thin-film coil,

wherein at least either of the steps of forming the first magnetic layer and the second magnetic layer includes the step of forming the cobalt-nickel-iron alloy thin film through electroplating, the cobalt-nickel-iron alloy thin film containing 60 to 75 weight % cobalt, 10 to 20 weight % nickel, and 10 to 20 weight % iron, and having a crystal structure that is a mixture of a body-centered cubic structure phase and a face-centered cubic structure phase, in which I_b/I_f is in the range of 0.3 to 0.7 inclusive where I_b represents the intensity of an X-ray diffracted from a (110)-plane of the cubic-centered structure and I_f represents the intensity of an X-ray diffracted from a (111)-plane of the face-centered structure.

7. (Withdrawn) A method of manufacturing a thin-film magnetic head according to claim 6, wherein the pH of a plating bath for forming the cobalt-nickel-iron alloy thin film through electroplating is adjusted to 3.0 to 4.0 inclusive.

8. (Withdrawn) A method of manufacturing a thin-film magnetic head according to claim 7, wherein the value of I_b/I_f is controlled by controlling the pH of the plating bath.

9. (New) A cobalt-nickel-iron alloy thin film formed by electroplating with a plating bath having a pH in the range of 3.0 to 4.0 inclusive, the cobalt-nickel-iron alloy thin film containing 60 to 75 weight % cobalt, 10 to 20 weight % nickel, and 10 to 20 weight % iron and having a crystal structure that is a mixture of a body-centered cubic structure phase and a face-centered cubic structure phase, wherein I_b/I_f is in the range of 0.3 to 0.7 inclusive where

I_b represents the intensity of an X-ray diffracted from a (110)-plane of the body-centered cubic structure and I_f represents the intensity of an X-ray diffracted from a (111)-plane of the face-centered cubic structure.

10. (New) A cobalt-nickel-iron alloy thin film formed by electroplating with a plating bath having a pH in the range of 3.0 to 4.0 inclusive, the cobalt-nickel-iron alloy thin film containing 60 to 75 weight % cobalt, 10 to 20 weight % nickel, and 10 to 20 weight % iron and having a crystal structure that is a mixture of a body-centered cubic structure phase and a face-centered cubic structure phase, wherein I_b/I_f is in the range of 0.375 to 0.7 inclusive where I_b represents the intensity of an X-ray diffracted from a (110)-plane of the body-centered cubic structure and I_f represents the intensity of an X-ray diffracted from a (111)-plane of the face-centered cubic structure.

11. (New) A thin-film magnetic head comprising:

a medium facing surface that faces toward a recording medium;
a first magnetic layer and a second magnetic layer magnetically coupled to each other and including magnetic pole portions that are opposed to each other and placed in the regions of the magnetic layers on a side of the medium facing surface, each of the magnetic layers including at least one layer;

a gap layer provided between the magnetic pole portions of the first and second magnetic layers; and

a thin-film coil at least a part of which is placed between the first and second magnetic layers, the at least part of the coil being insulated from the first and second magnetic layers, wherein:

at least either of the first and second magnetic layers includes a part made of a cobalt-nickel-iron alloy thin film; and

the cobalt-nickel-iron alloy thin film is formed by electroplating with a plating

bath having a pH in the range of 3.0 to 4.0 inclusive, the cobalt-nickel-iron alloy thin film containing 60 to 75 weight % cobalt, 10 to 20 weight % nickel, and 10 to 20 weight % iron and having a crystal structure that is a mixture of a body-centered cubic structure phase and a face-centered cubic structure phase, wherein I_b/I_f is in the range of 0.3 to 0.7 inclusive where I_b represents the intensity of an X-ray diffracted from a (110)-plane of the body-centered cubic structure and I_f represents the intensity of an X-ray diffracted from a (111)-plane of the face-centered cubic structure.

12. (New) A thin-film magnetic head comprising:

a medium facing surface that faces toward a recording medium;
a first magnetic layer and a second magnetic layer magnetically coupled to each other and including magnetic pole portions that are opposed to each other and placed in the regions of the magnetic layers on a side of the medium facing surface, each of the magnetic layers including at least one layer;
a gap layer provided between the magnetic pole portions of the first and second magnetic layers; and
a thin-film coil at least a part of which is placed between the first and second magnetic layers, the at least part of the coil being insulated from the first and second magnetic layers, wherein:

at least either of the first and second magnetic layers includes a part made of a cobalt-nickel-iron alloy thin film; and

the cobalt-nickel-iron alloy thin film is formed by electroplating with a plating bath having a pH in the range of 3.0 to 4.0 inclusive, the cobalt-nickel-iron alloy thin film containing 60 to 75 weight % cobalt, 10 to 20 weight % nickel, and 10 to 20 weight % iron and having a crystal structure that is a mixture of a body-centered cubic structure phase and a face-centered cubic structure phase, wherein I_b/I_f is in the range of 0.375 to 0.7 inclusive

where I_b represents the intensity of an X-ray diffracted from a (110)-plane of the body-centered cubic structure and I_f represents the intensity of an X-ray diffracted from a (111)-plane of the face-centered cubic structure.